

**REMARKS**

Claims 11-19 and 21-31 are pending in this application. Claims 12, 14-16, 18, 19, 21, 22, 24, 25, 27, 28, 30 and 31 are withdrawn from consideration.

**I. Rejection Under 35 U.S.C. §103(a)**

The Office Action rejects claims 11, 13, 17, 23, 26 and 29 as allegedly being unpatentable over Watanabe et al. (J. Org. Chem. 2002, 67, 1712-1715) ("Watanabe") in view of Abdur-Rashid (Organometallics 2000, 19, 2655-2657) ("Abdur-Rashid"). Applicants respectfully traverse this rejection.

Watanabe discloses a process for the production of an optically active alcohol, wherein a ruthenium complex is used as a catalyst in the presence of a formic acid hydrogen donor and a triethylamine base. Watanabe, 1712, first paragraph. The Patent Office admits that Watanabe fails to disclose the use of pressurized hydrogen and further fails to disclose a reaction performed without the presence of a base, both limitations being required by claim 11.

The Patent Office alleges that Abdur-Rashid remedies the deficiencies of Watanabe. However, Abdur-Rashid fails to remedy the deficiencies of Watanabe.

**A. Complex 2 Of Abdur-Rashid,  
Not Complex 1, Is The Only Effective Catalyst**

Abdur-Rashid discloses that Complex 2 (i.e.,  $\text{RuH}_2(\text{PPh}_3)_2(\text{R},\text{R}-\text{cydn})$ ) is a hydrogenation catalyst that hydrogenates ketones to alcohols under 3 atm of  $\text{H}_2$  gas without the addition of a base. Abdur-Rashid, 2655, Summary and 2656, last paragraph. Complex 2 of Abdur-Rashid is a dihydride complex obtained by reducing Complex 1 (i.e.,  $\text{RuHCl}((\text{PPh}_3)_2(\text{R},\text{R}-\text{cydn}))$ ) with metal hydride reductant  $\text{KBH}(\text{sec-Bu})_3$ . Abdur-Rashid, 2655, Scheme 1. In other words, Abdur-Rashid discloses that the chloride catalyst

(Complex 1) was reacted with a base to form a dihydride complex (Complex 2), and that the formed dihydride complex (Complex 2) was able to activate hydrogen to hydrogenate ketones in the absence of a base. See Abdur-Rashid, 2656, last paragraph, to 2657, first paragraph.

Abdur-Rashid confirms that the catalyst is Complex 2, not Complex 1, in disclosing that "[i]n the absence of a base, no hydrogenation was observed, clearly demonstrating that the hydrido chloro species 1 [Complex 1] is not the true catalyst." Abdur-Rashid, 2656, first paragraph. Thus, prior to reaction with base, Complex 1 cannot hydrogenate ketones, and therefore Abdur-Rashid fails to describe a process as recited in claim 11, and fails to remedy the deficiencies of Watanabe.

As discussed below, Complex 2 of Abdur-Rashid is not analogous to the Ru-(II) catalyst of Watanabe, and, because Abdur-Rashid fails to describe that Complex 1 can effectively hydrogenate ketones, the Patent Office reliance on Abdur-Rashid as allegedly remedying the deficiencies of Watanabe is incorrect.

**B. Complex 2 Is Not The Same Compound As Formula 1 Of Claim 11 Or The Compound Of Watanabe**

Complex 2 of Abdur-Rashid is not the Ru-(II) catalyst described in Watanabe, and is not the compound of Formula 1 recited in claim 11. See Abdur-Rashid, 2655, Scheme 1; Watanabe, 1712, Scheme 1; and claim 11. Additionally, it is clear from the above analysis that Abdur-Rashid fails to describe hydrogenation of ketones with Complex 1 (a chloride catalyst), under pressurized hydrogen in the absence of a base.

Because the catalyst of Abdur-Rashid (Complex 2) is not the same as the Ru-(II) catalyst of Watanabe, Abdur-Rashid would not have provided one of ordinary skill in the art with any reason or rationale to have attempted to use the Ru-(II) catalyst of Watanabe to hydrogenate ketones under pressurized hydrogen and without the presence of a base, as recited in claim 11. In other words, the Ru-(II) catalyst of Watanabe is, at best, analogous to

Complex 1 of Abdur-Rashid, which is specifically described as non-functional as a hydrogenation catalyst in the absence of base, so Abdur-Rashid would have failed to provide one of ordinary skill in the art with any reason or rationale to have attempted to use the Ru-(II) catalyst of Watanabe to hydrogenate ketones under pressurized hydrogen and without the presence of a base, as required in claim 11. Therefore, Abdur-Rashid fails to remedy the deficiencies of Watanabe.

C. Conclusion

Therefore, Watanabe and Abdur-Rashid, whether taken independently or in concert, fail to render obvious claims 11, 13, 17, 23, 26 and 29. Withdrawal of the rejection is respectfully requested.

II. Rejoinder Of Claims

Rejoinder of claims 12, 14-16, 18-19, 21-22, 24-25, 27-28 and 30-31 is respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 11-19 and 21-31 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Christopher A. Fasel  
Registration No. 59,204

JAO:CAF/can

Date: June 4, 2009

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 320850**  
**Alexandria, Virginia 22320-4850**  
**Telephone: (703) 836-6400**

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
--